

2020

COMPUTER SCIENCE — HONOURS

Paper : CC-12

(Object Oriented Programming)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer **question no. 1** and **any four** questions from the rest.

1. Answer **any five** questions : 2×5
- (a) What is byte code?
 - (b) What restriction are applied to the Java Static methods?
 - (c) Differentiate between a compiler and an interpreter.
 - (d) What is 'overloading'?
 - (e) State the difference between the length of a string buffer object and its capacity.
 - (f) Write the difference between a constructor and a method.
 - (g) State the purpose of garbage collection.
 - (h) What is the functionality of JVM?
2. (a) What is private access specifier? Explain with an example, how is it different from public and protected access specifiers.
- (b) Explain life cycle of an applet. (2+4)+4
3. (a) Write a Java program to check whether a string is palindrome using command line argument.
- (b) How will you perform type casting in Java?
- (c) Explain with an example how *Labelled loop* works in Java. 5+2+3
4. (a) State the differences between the string and stringbuffer classes in Java.
- (b) Explain with example, how copy constructor is used in Java.
- (c) Discuss about different types of throwable exceptions in Java. 3+3+4

Please Turn Over

5. (a) Predict the output of the following code and comment of your answer.

```

Class leftshift_operator
{
    Public static void main (string avgs [] )
    {
        byte x=64;
        int i;
        byte y;
        i=x<<2;
        y=(byte) (x<<2) ;
        System.out.print (i+ " " + y);
    }
}

```

- (b) What are the different types of AWT components? How are these components added to the container?
- (c) Explain how multiple inheritance can be implemented in Java. 2+(2+3)+3
6. (a) What is a vector? How does it differ from an array and list?
- (b) Write a program to count the number of words in a given sentence. (2+3)+5
7. (a) Design an interface called shape with methods draw() and getArea(). Further, design two classes Circle and Rectangle that implements shape to compute area of respective shapes. Write a JAVA program for the same.
- (b) How thread synchronization is achieved in Java? (3+3)+4
8. (a) Let i be an integer and f be a floating point number. Explain the difference between $i = (int) f$; and $i = (int) Math.round(f)$; For what value of f do they give the same result? For what value of f do they give different result? What happens if f is negative?
- (b) What does the variable CLASSPATH signify?
- (c) Elaborate the steps to create your own package in Java. (1+1+1)+2+5
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